



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,700	11/17/2003	Wen-Jian Lin	DEE-PT064.1	5380

3624 7590 12/28/2004

VOLPE AND KOENIG, P.C.
UNITED PLAZA, SUITE 1600
30 SOUTH 17TH STREET
PHILADELPHIA, PA 19103

EXAMINER

DUONG, THOI V

ART UNIT	PAPER NUMBER
----------	--------------

2871

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/714,700

Applicant(s)

LIN, WEN-JIAN

Examiner

Thoi V Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-11 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 10/139852.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the Reply filed October 05, 2004.

Claims 1, 2, 4-6, 8-10 and 13 are currently pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo et al. (USPN 6,195,140 B1) in view of Yazawa et al. (USPN 4,431,272).

Re claim 1, as shown in Figs. 37 and 38, Kubo et al. discloses a method of manufacturing a thin film transistor liquid crystal structure comprising the steps of:

- (a) providing an insulating substrate 201;
- (b) forming a gate structure (gate electrode 210 and gate line 202) on a portion of said insulating substrate (Fig. 38A);
- (c) forming an insulating layer 209 (gate insulating film) on said insulating substrate (Fig. 38A);
- (d) forming a first semiconductor structure 212 and a second semiconductor structure 211 on said insulating layer (col. 32, lines 52-57);
- (e) forming a conducting layer 241 on said insulating layer and said second semiconductor structure (Fig. 38A and col. 32, lines 57-59);

Art Unit: 2871

(f) etching said conducting layer to define a source region and a drain region 243 and a structure 242 (Fig. 38B and col. 32, lines 60-64); and

(g) forming a transparent electrode 246 on said structure, wherein said transparent electrode is electrically contacted with said source region and said drain region (Fig. 38D and col. 34, lines 1-9).

Re claim 7, as shown in Fig. 29 (see also Fig. 18), Kubo et al. discloses a thin film transistor liquid crystal display comprising:

an insulating substrate 70 (Fig. 18);

a thin film transistor 71 formed on said insulating substrate (Fig. 18);

a structure 170 formed on said insulating substrate (Fig. 29); and

a transparent electrode layer 168 formed on said structure (Fig. 18 and col. 27, lines 53-56).

Re claim 3, said conducting layer is formed from a metallic material (col. 4, lines 54-55).

Re claims 6 and 11, said transparent electrode is formed from indium-tin-oxide (col. 4, lines 56-57).

Kubo et al. discloses a method of manufacturing a thin film transistor that is basically the same as that recited in claims 1 and 7 except for a curved structure with an inclination.

As shown in Fig. 1c, Yazawa et al. discloses a conducting layer 18 (an aluminum electrode) having a curved structure with an inclination (rugged region 17) formed by etching the conducting layer 18 (col. 3, lines 59-62 and col. 4, lines 5-9),

Art Unit: 2871

wherein, re claims 2 and 8, as shown in Fig. 4a, an angle "theta" of said inclination is about 5 to 30 degrees (col. 6, lines 58-64); and

wherein, re claims 4, 5, 9 and 10, said curved structure is an awl-shaped structure or a conical structure as shown in Figs. 4b and 11a.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of manufacturing a thin film transistor liquid crystal structure of Kubo et al. with the teaching of Yazawa et al. by etching a conducting layer to form a curved structure with an inclination so as to enlarge viewing angle and improve brightness of the display (col. 1, line 63 through col. 2, line 12).

Response to Arguments

4. Applicant's arguments filed October 05, 2004 have been fully considered but they are not persuasive.

Applicant argued that Yazawa does not teach or suggest the curved structure with an inclination formed by directly etching a conductive layer. The Examiner disagrees with Applicant's remarks since, as shown in Fig. 1c, Yazawa clearly discloses that the rugged region 17 (the curved structure with an inclination) is formed by directly etching the aluminum electrode 18 (col. 3, lines 59-62 and col. 4, lines 5-9). Thus, Yazawa teaches a similar method as Applicant's invention to provide an improved conductive layer for enlarging viewing angle and improving brightness of the display.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2871

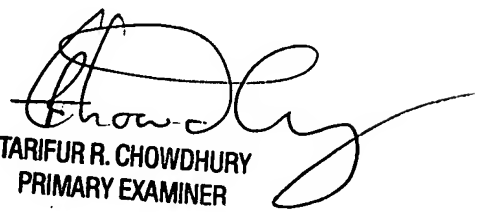
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong 

12/21/2004


TARIFUR R. CHOWDHURY
PRIMARY EXAMINER